The Boston Computer Society

# The Boston Kugel

The Boston Kaypro Users' Group

Vol. 5 No. 2 $2.00 May - June 1988

## Director's Letter

by Lee Lockwood

### The Urge to Merge

Boskug is merging with the other two BCS CP/M user groups, BOG (Boston Osborne Group) and CP/M (generic). The synthesis will have taken place officially by September 1st, but in fact the process has already begun.

There's a bit of nostalgia connected with this, since Boskug got its start, more than five years ago, under BOG's wing. Though not too many BOG originals are around any more, we hope that those who are left will feel as at home in our new, enlarged group as they made us feel then.

The CP/M group is also an older one, more numerous than Boskug, and more diverse in character. Those who attend meetings tend to be serious techies. We anticipate they will bring new excitement to the Boskug CP/M contingent.

Most of all, it's my hope that by consolidating the CP/M contingent within the BCS we will help support the operating system as long as there are users around. CP/M has shown convincing staying power; in fact, there's amazing vitality in it still. Jay Sage, current leader of the CP/M group, is a longtime Boskug member who has given us many a fascinating program. If there are others in his group like Jay, we all will be immensely enriched by their arrival.

### Meetings

We hope to hold monthly meetings on the usual Boskug schedule (second Tuesday of the month, 7:30 p.m.) in either the Lexington High School or a comparable facility. However, instead of one program there will be two, one for CP/M and one for DOS computer users. The group will meet first in one room for the usual business announcements, discussions and questions, after which it will break out into two subgroups in separate rooms for the programs.

### Newsletter

The Kugel will be enlarged to include more material about CP/M computers and programs. It will still appear bi-monthly. John Goldie hopes that help will be forthcoming from editors and writers in the other two groups.

### Public Domain.

BOG has an enormous CP/M library and a DOS library almost as large. The CP/M Group also has an extensive disk library. Under the supervision of Dave Veinot, new chairman of Boskug's CP/M library committee (more on this later), the holdings will be amalgamated. In addition, we hope to reinstitute the custom of having Kaypro and Osborne users bring machines to the meetings, where disks will be available for copying.

### Bulletin Board

The Boskug board will continue to support both DOS and CP/M. The BOG board, which John Kinsella began running before it was even part of BCS, will continue as long as he wants to maintain it. News and messages concerning all three groups will be in the Boskug Board message base. Those wishing files specifically configured for Osborne will continue to find them on the BOG board. As to the generic CP/M people, the Boskug Board will support them as well.

We hope to acquire an MS-DOS computer with 60mb or more of storage for our board, and install at least two phone

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## BOSKUG PRESENTS

### June 7, 1988 at Lexington High School

### The Boston Premiere of WORDSTAR 5.0

Jim Welch, MicroPro regional representative, will be on hand once again to demonstrate this latest and much-improved version of a favorite word processing program. Pull-down menus. Preview page or full document before printing. Full printer support (including lasers). Many, many other new features.

As usual, Jim is expected to bring along some prizes to raffle off, including a copy of 5.0 as the grand prize. He'll also explain how Boskug members can sign up for a group purchase.

EXTRA ADDED ATTRACTION: We expect to have a vendor on hand to demonstrate the new Hewlett-Packard DeskJet printer (laser-like quality for under $800).

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MEMBERSHIP INFORMATION
BOSKUG, the Kaypro Users Group of the Boston Computer Society, is a volunteer group of Kaypro owners who have banded together to share information and solve problems related to their computers, accessories and software. BOSKUG meets on the second Tuesday of the month. Programsinclude lectures, panels, and openended discussions. Meeting notices are carried in the BCS monthly CALENDAR and in its monthly magazine, UPDATE.

To join BOSKUG, write the Boston Computer Society at 1 Center Plaza, Boston, MA 02108, or call (617) 367-8080. If you live more than 75 miles away and wish merely to subscribe to The Kugel, send $15 for a year's subscription to BOSKUG, 27 Howland Rd., W. Newton, MA 02165. Foreign subscriptions: $20. Please send change of address information to the BCS; enclose your old mailing label.

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BOSKUG and The Boston Kugel value your comments, opinions, and contributions. Please write to us, or call us with your thoughts.

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# Editor's Note

As you've probably read in Lee Lockwood's **Director's Note**, Boskug will be merging with the Osborne and CP/M user groups. Although membership in the three groups has thinned during the last few years, we hope a consolidated group will provide a critical mass of erstwhile CP/M (and ZCPR) users. If a coterie of enthusiasts can be established, we think it will help ensure the viability of the venerable but still evolving eight bit computer world.

I am not sure what the name for our new megagroup will be (or is that metagroup?), or how many syllables the name of the newsletter will contain. I am open to suggestions, although I don't know if anyone else is, so send me your best ideas. Be sure to write them on the back of a $20 bill (or a $25 bill if you're feeling particularly expansive). The address is:

John Goldie
158 Hollett St.
Scituate, MA 02066

Although this retrenching on the CP/M front might lead one to wonder where the DOS contingent of the group is headed, I think this question tends to be submerged in where DOS itself, and Kaypro itself, are headed. For an interesting look at both questions, see the reports by Michael Spampinato and Nat Weiner in this issue of the **Kugel**.

And to close with social notes, I'd like to wish the very best of luck to Boskug CP/M Librarian Art LeFort who is changing his status to married and his state to Texas. Additionally, I'd like you to join me in wishing the best of luck to Boskug Sysop Adam Heath who is also getting married this summer.

# A Whirlwind Look at the World of File Compression

**by Bob Freed**

## Background

The need for computer programs to compress file size grew largly out of computer-based telecommunication activities. Methods of shrinking file size were developed to reduce telephone on-line charges. The Huffman coding mechanism was an early mechanism to reduce file size and it formed the basis for Richard Greenlaw's popular CP/M SQ.COM and USQ.COM programs, released in 1981. This method achives its efficiency by storing those characters or pieces of information which occur most often in fewer bits than those characters or information which occur infrequently. While file compression varies according to the type of original file, text files, for expamle, were typically reduced by 35%. Huffman coding has been largely superseded by other more efficient algorithms.

In order to make sense of the many recently developed file compression programs now existing, I present the following brief historical perspective.

All of these programs (including ARC, PKARC, ZOO, and DWC for MS-DOS and others, CRUNCH and ARK for CP/M, COMPRESS for UNIX, StuffIt for Macintosh, etc.) employ variations on a general method known as "LZW." The LZW compression mechanism is named for its principal contributors, Lempel, Ziv, and Welch. J. Ziv and A. Lempel provided the theoretical basis in published articles in the 70's, but few people sat up and took notice until Terry A. Welch at the Sperry Research Center and later at DEC published a practical (and amazingly simple) description in 1984.

One of the first microcomputer implementations of the LZW mechanism to appear was a public domain C language program called LZWCOM by Kent Williams. Williams released operational versions of LZWCOM for both CP/M and MS-DOS. This program provided the basis for the original LZW algorithm used by MS-DOS ARC and CP/M CRUNCH. The term "crunched" was coined by the author of ARC, Thom Henderson of System Enhancement Associates (SEA), who used Williams's code nearly intact. The same algorithm and name were adopted by author Steven Greenberg for the first version of his Z80 assembly language implementation for CP/M.

ARC and CRUNCH achieved rapid and widespread popularity for their respective operating systems because of the tremendous improvement in compression offered by the LZW method compared to its predecessors like the Huffman method used by the venerable SQ "squeeze" program, originated by author Richard Greenlaw years earlier for CP/M). ARC also gained immense popularity because in one program it combined the compression process with a separate archival (or librarian) file collection process.

At the same time a group of UNIX authors took notice of the LZW algorithm and their work resulted in another public domain C language implementation, called COMPRESS. This program has become extremely influential in UNIX environments, since it is now used to perform automatic compression of USENET news articles which are batch-transmitted between UNIX machines worldwide via the UUCP network, primarily over dial-up telephone lines. COMPRESS utilizes the larger memory space typically available in UNIX- based machines to generate better compression than is possible on most CP/M and MS-DOS systems. This is achieved by varying the basic parameter ("code size") of the LZW process. [This is a simplification, but I'm trying to be non-technical here!]

However, COMPRESS also employed several variations on the basic LZW algorithm which suggested implementation on smaller machines to generate better compression than LZWCOM. SEA adopted these improvements in a later ARC version (5.00), as did Greenberg in CRUNCH (version 2.0). Greenberg also introduced some significant improvements of his own, so that CP/M CRUNCH 2.x generates better compression than MS-DOS ARC 5.xx, particularly for very large files. Lamentably, the file formats produced by these two programs are totally different and incompatible, and Greenberg's work with CRUNCH has achieved less notice than it deserves outside of the rapidly diminishing CP/M community. Greenberg has always provided his Z80 assembly language source code for public inspection, but this holds little interest or comprehensibility to most programmers of larger computer systems. [Note that Greenberg's primary interest is compression, while Henderson's was in the production of a file archive utility. All of the CRUNCH code is original, while ARC borrowed heavily from other sources, such as SQ, LZWCOM, and COMPRESS.]

SEA also distributed the ARC program's C language source code, at least through ARC version 5.12. This enabled many others to understand the ARC file format and its LZW implementation, and to design compatible programs, for MS-DOS and other systems, like my CP/M UNARC program. Other authors of MS-DOS ARC clones noticed that small, but sometimes significant, compression improvements were possible. These include Phil Katz (PKARC) and Wayne Chin and Vernon Buerg (ARCA). Both of these programs received significant attention, primarily because of their improved speed of operation (due to use of assembly language instead of C), as well as improved compression. PKARC wins most comparison contests on both counts.

It wasn't until quite some time later that some compression improvements showed up in SEA's ARC in version 5.20, but by then PKARC had introduced more substantial improvements. Unfortunately, source code for these competing programs and the newest versions of ARC has never been offered to the public, so most .ARC generating programs for other systems are based on the older and less effective algorithm used by ARC 5.12 (e.g. the recent CP/M ARCC and ARK releases).

Phil Katz generated considerable controversy with the introduction of a new compression method called "squashing" in PKARC version 2.0. Although it is not really "new" -- just a variation of LZW using a larger code size -- it does provide improved compression and speed. Many have objected to this new methods on the grounds that the original "standard" SEA ARC program cannot handle files created by PKARC. I don't wish to enter into this debate, other than to point out that Katz

published the specs for his method, and many .ARC file processing programs have been updated to handle squashed files. This includes my UNARC for CP/M, as well as Vernon Buerg's ARCE for MS-DOS (which is now distributed by SEA with ARC!). It is interesting to note that Greenberg's CRUNCH generates approximately the same degree of compression as Katz' PKARC squashing, using a much different variation of the LZW algorithm and much less memory. [I'll even be so bold as to suggest that further significant improvement may be possible, even in a "small" memory system such as CP/M!]

Programs capable of generating the .ARC file format have spread to most other systems (including now CP/M). It is the most prevalent form of file storage on BBS systems for PC/MS-DOS, Commodore Amiga, and Atari ST machines. However, because it was originally designed for MS-DOS files, there are certain disadvantages to the format on some other systems. For example, ARC does not support file names longer than 12 characters. Several competing programs have appeared for MS-DOS, including ZOO, by Rahul Dhesi, and DWC, by Dean W. Cooper. These were designed for portability, and ZOO, in particular, has been ported to several different machines. For Macintosh systems, a program called StuffIt, by Raymond Lau, has emerged to handle the unique characteristics of the MAC file system. All of these programs utilize LZW, but with different variations, resulting in different degrees of compression and totally incompatible file formats.

My interests lean much more toward improvements in file compression technique than toward compatibility with existing methods, although I don't wish to contribute to the computer world's version of the Tower of Babel as described above.

*Bob Freed kindly allowed us to adapt this article from a series of his messages on the Kaypro* BBS.

# MiniScribe Model 80SC ScribeCard XT

## A Review

**by John Goldie**

**MiniScribe Corporation**
**861 Lefthand Circle**
**Longmont, CO 80501**
**800-356-5333**

The Miniscribe Model 80SC ScribeCard XT is a no nonsense hard disk drive on a controller card designed for PC and PC XT compatible computers. It comes at a reasonable price, plugs into the motherboard with no trouble and no further cabling, formats quickly, and, in my machine, has worked without trouble for eight months. It occupies one-and-a-half slots on the motherboard and comes with a nominal 30 megabyte capacity. As shipped, the drive is low level formatted, so running the MS-DOS utilities FDISK.COM and FORMAT.EXE are all that are needed to put the drive in service.

### Time, and technology, march on

A few years ago I bought a Leading Edge Model D with two floppy disk drives for what was then a competitive price. (That the current price is 61 percent of what was then a competitive price is one of those nagging reminders that, as Damon Runyon put it, "life is 6 to 5 against.") It was pretty neat to have two double sided drives of 360K each, compared to the two 191K single sided drives which were standard issue on our Kaypro 2. Other, wiser voices suggested that perhaps a computer with a hard disk drive would be a better choice, but I thought I would be happy with the two 360K drives.

And I was -- until I found out how large programs written for MS-DOS really were. But budgets are budgets and, forced to accommodate, I was more or less comfortable using floppies for a year before seriously returning to the issue of storage.

The imagined convenience of a hard disk quickly changed to a virtual necessity when I developed an inexplicable desire to learn to program in C. It turns out that if you add up all the files a C compiler likes to have around - editors, linkers, and all manner of sundry stuff - it spreads itself out over most of two floppy drives and the source code takes up a good bit of what is left over.

### Where to put it

Unlike a lot of other garden variety clones, the disk drive bays in the Leading Edge Model D have space for only two half height drives instead of four. Although this makes for a smaller cabinet, it means that in order to install a regular hard drive I would have needed to give up one floppy, and for a variety of reasons (such as reading and copying CP/M disks) I was unwilling to do so. The solution was a hard disk drive on a card.

The acknowledged pioneer of such drives is the Plus Development Corp. who introduced the HardCard 10 a few years ago. By taking a slimmed down hard drive and mounting it vertically on the controller card, Plus Development provided a trouble free method of installing a hard drive to anyone who had ever installed an expansion board in a PC. The success of the original HardCard spawned a whole new category of product. While the HardCard remains the industry leader in terms of quality, finish, and in the fact that it really does take up only one slot, it is among the more costly. The price range for hard disk cards is $350-$850 or so. I bought the 30 meg Miniscribe for $479 from PC Connection in Marlowe, NH; a 20 meg version is available for $449.

I spoke with a technical service representative from Miniscribe to make certain that the drive would work in my Leading Edge. When I called their free 800 number, no one was immediately available to answer my questions, but within thirty minutes two technicians from Miniscribe had called to make sure I had the information I needed; very impressive.

On the other hand, I tried calling the technical information number at Leading Edge, but every time I called, if I got

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# On Board CP/M

**by Hal Vogel**

## Doing DOS the CP/M Way

We compute under CP/M because we want to. However, there are times when it is necessary to momentarily digress from CP/M, while still remaining "with" CP/M. There are times when we just can't avoid working with something "DOS." Often this will entail having to read a file produced on a DOS machine. Fortunately, those times do not require that we use a DOS machine; only that our Kaypros masquerade as one.

There are several ways to get into DOS without fully exiting from CP/M. One way involves hardware, but many of the options involve nothing heavier than a disk.

At the most extreme hardware end is the SWP CO-Processor Board. In reality, the SWP Co-Processor consists of two boards. There's the main board with all the RAM (up to 2-MB), ROM (8080 or V20) and CPU, and a smaller daughter board that plugs into the Z80 slot. Together, these boards actually enable a Kaypro CP/M machine to run DOS programs in addition to just reading text files.

It's quite amazing, but not quite a miracle and not quite foolproof. Hardware dependent programs which rely on something unique to a DOS machine will not find the necessary hardware inside our Kaypros -- even with the SWP Board. Those using graphics won't be able to display their graphics on the screen. They may still run under the SWP Board, but you just won't see the graphics until they're printed. LOTUS 1-2-3 is an example of this type of program. DOS programs that write directly to the screen also are incompatible. But many DOS programs run just fine under the SWP Board. This includes many public domain goodies and heavyweight titles (e.g., dBASE II, LOTUS rel. 1A, WORDSTAR 3.3, MULTIPLAN, etc.).

One of the nicer aspects of the SWP Board is that it isn't useful simply for your DOS jobs. When not allowing you to pretend that your Kaypro is an IBM clone, it can also double as a RAM Disk. All of the board's RAM which is used normally to emulate DOS (up to 2-MB) can be accessed in its CP/M RAM Disk role. This added function makes it a whole lot easier to justify the SWP Board's $369 cost.

If you don't need to run DOS programs, but simply want to use DOS data files, CP/M's DOSing middle ground involves programs that alienize drives for reading and working under CP/M. Two well-known commercial programs which provide this function are Compat and Uniform. You can't run DOS programs using Uniform and Compat, but you can use them to read data files on DOS disks, read DOS disk directories, delete its files and move them back and forth between DOS and CP/M disks.

With a program like this, you can take a DOS data file, read it with your Kaypro, and copy it onto a Kaypro-formatted CP/M disk. From this point on, it can be treated as a normal CP/M data file. These programs also allow formatting disks in DOS format. This is important if you are going the other way -- preparing a CP/M file for someone to read on a DOS disk.

Uniform and Compat do the same things, although I favor Compat's added versatility. It can interrogate a DOS disk, for example. The Compat documentation doesn't say this, but this indeed is the effect sometimes when you determine how much space is left on a DOS disk.

Compat also reports the disk's format, which sometimes isn't what you originally thought it was. There were several times I was having trouble copying DOS files under Compat. The reason, it turns out, was that they were older 8-sector (315K) formats, rather than the more contemporary 9-sector style (354K - incorrectly called 360K).

Compat does have a serious flaw, however. The program is what the gurus call "a not very well-behaved program." This isn't a problem under vanilla CP/M, but it does cause difficulties with TurboROM. The solution is easy. Before exiting, replace the Compat disk with any other one. Unfortunately, this means that Compat can't be run from a hard disk under TurboROM.

Uniform's major problem is its speed - or rather, lack of it. It seems to take forever to load, though there are ways of combining loading steps on a command line so there is less lost time.

PluPerfect deserves a special mention in any discussion of CP/M DOSing because it can do what none of the others can. PluPerfect's recent addition to MULTICOPY enables you to read, transfer, and delete files back and forth between CP/M and DOS disks, just as do Compat and Uniform.

However, MULTICOPY's new DOSDISK component also permits working from CP/M on DOS files as if they were CP/M. You can use your CP/M WORDSTAR to compose or edit DOS files directly on a 9-sector DOS-formatted disk. PluPerfect even upgrades two CP/M utilities that now work better with DOS files on DOS disks. In effect, DOSDISK permits a DOS disk to be fully integrated into the CP/M environment, just as if it were another CP/M disk in our machine. As well as being nice, it is also amazing!

MULTICOPY is the formatting side of this diversified program. It can format disks in a multitude of CP/M formats (some that you won't even recall as ever having existed). Compat and Uniform also do this. In addition, MULTICOPY, Uniform, and Compat format in four DOS formats.

MULTICOPY requires a TurboROM, but it is difficult to imagine any Kaypro CP/M machine not running with TurboROM. The TurboROM is just about the nicest thing you can do to your CP/M Kaypro. It runs much better, with added capacity and much more flexibility. PluPerfect's TurboROM just plugs in where the Kaypro's current ROM chip is. It's a direct replacement at a cost ($59) that almost makes it foolish not to have one.

## On the Boards

Seen on the LIKUG Bulletin Board is an upgrade to NULU, the nifty library program. Two "internal management" improvements were made. One brought it to version 1.51. The other took it a micro-step further (NULU152). You may not readily notice the improvements in 151, but it always is nice to have the latest version of something (if it works at least as well as that it replaces).

NULU152 is another story. This is a major improvement, since it corrects a real nuisance with this otherwise superb program. C.B. Falconer worked out how to get Martin Murray's NULU to boot faster. So what? You wouldn't ask if you used NULU. There is a nagging startup lag with this program that always has been a blotch on its performance (which otherwise is simply great).

Now that's cured. This, however, created another problem. Its author put it on the boards in a patch that required a Macro assembler. You need a Macro assembler in order to get it into command file (executable) form. Most people don't have one of these. The latest version of the program takes care of that common shortcoming. Version 152 now resides assembled on our board in ready-to-run .COM file form. But I wonder about authors who take the time to perform such fine, innovative service, then seem to purposely make it difficult for the community to use their marvelous creations. (Editor's note: as of the end of February, NULU152.OBJ can be found on the Boskug board in file area B0: -- simply download it and rename to NULU152.COM or NULU.COM if you hate to type.)

**Note:** Uniform and Compat are available from a number of software sellers for around $69 each. PluPerfect (Box 1494, Idyllwild, CA 92349) and Advent Products (3154 East La Palma Ave. #F, Anaheim, CA 92806) both can provide TurboROMs ($59) and MULTICOPY (around $35). Those with an older MULTICOPY that lacks DOSDISK can order an upgrade for only $5. SWP's co-processor board comes from SWP Microcomputer Products, Inc., 1000 W. Fuller, Fort Worth, TX 76115.

*With this issue Hal Vogel starts a column devoted to things pertaining to CP/M. He can be reached at 19 Neptune Lane, Willingboro, NJ 08046.*

# The Computer Journal

### A Magazine for 8-Bit Computer Hobbyists (and Others)

**by Jay Sage**

The Computer Journal, or TCJ for short, has been one of the best kept secrets in the CP/M world, but I am going to spill the beans here and let the whole world know about it. TCJ is the magazine that Micro Cornucopia and Sol Libes's Microsystems Journal used to be -- a magazine for computer hobbyists, for people who not only use computers but who want to understand them. Today it is probably the only substantial publication that carries any material of interest to 8-bit computer enthusiasts.

I discovered TCJ a little over a year ago (I don't remember how) and thought it was a really nice new magazine. Until I got to the back issues listing at the end of the issue, that is. There I found a very long list of back issues, from which I deduced that TCJ had already been around for about four years. How could I have missed it all that time?

The timing of my discovery was serendipitous. I had been thinking about writing a regular column about ZCPR3 and was trying to figure out which magazine to approach. I immediately recognized TCJ as the perfect medium -- the right flavor and the right publication schedule. TCJ comes out six times a year, and I figured that I would be able to turn out a column every two months. Art Carlson, the editor, welcomed me to the editorial board of the magazine, and I have been writing for it ever since.

TCJ has a very fine staff of regular contributors. Before I joined, Rick Lehrbaum, engineering vice president of Ampro Computers, had been offering a series of articles on the SCSI (small computer system interface) bus, the standard vehicle for attaching hard disk drives and other devices to small computers. He doesn't write for every issue but contributes something now and then. Several impressive authors have joined TCJ in the past few months. Bob Blum, well known as a columnist for other (former) CP/M magazines, is now contributing a column in every issue. Ken Taschner of Electro Technical Services, designer and manufacturer of the ETS180IO + board for the SB180 computer and an expert on the HD64180 advanced 8-bit microcomputer chip, has contributed a couple of columns and will be offering more in the future.

A very exciting addition to the roster is Bridger Mitchell, well known in the Kaypro community for his work on TurboROM, Plu*Perfect Writer, DateStamper, Backgrounder (i and ii), etc. Mitchell has taken the lead in coordinating the effort to develop advanced 8-bit operating systems for Echelon, Inc. I have been working very closely with him on that project and am constantly amazed at the depth and precision of his understanding of complex operating system and programming issues. I am delighted that he will be documenting these ideas and sharing them with the programming community through a regular column in TCJ.

If you would like to join the rapidly growing readership of TCJ, send in your subscription order to The Computer Journal, 190 Sullivan Crossroad, Columbia Falls, MT 59912. Subscriptions are $16 for one year or $28 for two years in the U.S., $22 or $42 in Canada. For other foreign countries a one year subscription is $24 for surface mail delivery or $32 for airmail delivery. TCJ's phone number is (406) 257-9119. To encourage new subscribers, Sage Microsystems East is offering $2 off any subscription placed through SME (1435 Centre Street, Newton Centre, MA 02159). Back issues of TCJ are available, and a file listing them along with an order form recently appeared on my Z-Node RAS (remote access system). It is called TCJBACK.3Z0, and by now it is probably on the Kaypro board as well.

I consider TCJ to be a significant community asset. If we want to have such a vehicle of communication, it is incumbent on us to support it. Articles are always welcome. Feel free to contact me or Art Carlson if you have any suggestions or questions.

# The Sysop's Column

**by Adam Heath**

If you call the Boskug RCP/M on a regular basis, you know that the board has been down on several occasions because of problems with the hard disk. The BBS is on line 24 hours a day on a good day, and the hard drives are always on and running. While leaving hard drives running all the time saves the wear and tear of turning them on and off, on a bulletin board they do a lot of read/write accesses, especially during uploads or downloads. Since they get much more use in a 24 hour period on the board than they would in a typical office or home, the drives can get chewed up rapidly.

The hard drives on the Boskug RCP/M have begun to show their age. In one case there was a bad sector in the directory tracks on the Mini-Winnie drive. I tried running FINDBAD to no avail. I hunted high and low for the manuals, but couldn't find them anywhere. Finally in desperation I called Advanced Concepts Engineering and Consulting, and they not only told me exactly what I needed to do to reformat the Mini-Winnie, they also sent me a new set of manuals in the mail for free! They even offered to take a look at the hard drive to see if they could do something about the increasing loud whine that is emanating from the drive. I may yet take them up on this offer, but that would mean losing 20 megs of storage for a few weeks.

Fortunately my appeals for help didn't fall on deaf ears. Several users of the BBS made donations to help pay for new hard drives. Better yet, Nat Wiener donated a 20 megabyte Seagate ST225 to Boskug. As I write, the Kaypro 10 is at Computer Maintenance Systems where ace technician Leo Wong is installing the ST225 and replacing the dead clock battery. The installation of the ST225 will bring our total storage up to 40 megabytes. We can still use contributions, so if you'd like to help out please send a donation to:

**Boskug RCP/M**
**c/o Michael Bartell**
**17 Linden Ave. #1**
**Somerville, MA 02143**

I'm seriously thinking about replacing the Mini-Winnie hard drive. I'd like to replace the current 20 megabyte drive with a 40 megabyte unit which would bring the total storage up to 60 megabytes. We are currently seeking a MiniScribe 3650 40 megabyte drive from MiniScribe. If we ever upgrade to an MS-DOS machine, we could use the Minsicribe drive with an RLL controller as a 70 megabyte drive. If we can't arrange for a donation of a Minsicribe 3650, we may order one from a place in California that is selling them for $300. I can remember the days when $300 was great price for a 10 megabyte drive!

## Getting On Line

I recently had occasion to talk with a new user of the BBS. He wanted to know how to download files using Procomm and how to extract files from .ARC files. I went over the commands for downloading PKXA35A35.EXE, the self extracting archive file that contains PKARC and PKXARC. I even explained how to use the MS-DOS "COPY filename.ext PRN" command to print out an ASCII documentation file. The last question that this new user had was, "Why isn't this information written down anywhere?"

There are several answers to this question. Much of the needed information is written down in this column and on the bulletin board. Another resource is the second edition of the "On-Line Starter Kit" now being written by the BCS Telecommunications group. More of this kind of information will be included in my next column.

In the meantime if you want to learn how to get on line I'd like to suggest two articles from ProFiles magazine. "A First Session With Procomm" by Marshall L. Moseley in the March 1988 issue tells you how to dial up Fred Zuill's "Kaypro On-Line" BBS in Solana Beach, CA. "A Beginner's Guide to Telecommunications", also by Marshall L. Moseley, appeared in the April 1987 issue of ProFiles, and provides a general overview of telecommunications hardware, software, and protocols.

If you are the kind of person who prefers to sit through demonstrations and lectures to learn about a new aspect of computing, you should sign up for the following Boskug MS-DOS workshop. The instructor is a good friend of mine, and his workshops have been well received so far: "Introduction to MS-DOS Telecommunications", presented by Adam Heath. The workshop includes live demonstrations of General Videotex's Delphi network and a BCS Opus electronic bulletin board, a discussion of the hardware and software that you can use to access on-line services, and a brief hands-on session with the Procomm 2.42 shareware telecommunications program. Participants receive a lengthy handout and a free copy of Procomm 2.42.

- Cost: $15.00 BCS members only.
- 6:00 P.M. to 8:30 P.M.
- BCS Resource Center, One Center Plaza, Boston.
- Dates for 1988: May 18th, June 15th, September 14th, October 19th, and November 16th.

Advanced registration required, call 367-8080 to register. For further information call Adam Heath at 628-9719, evenings.

## Life at 2400 BPS

A few months ago I proposed the idea of a Boskug group purchase of 2400 bps modems. The response to my proposal was fairly weak, and after looking at 2400 bps modem prices I can understand why. It's now possible to buy a 2400 bps modem for well under the $219 that I paid for a USR Courier a little over two years ago.

I've been running my new Macintosh BBS (The Stack Manager at 628-1741) with an Everex Evercom 24E 2400 bps modem that I bought mail order for $195. It's a very nice modem that handles all but the worst line noise. It has DIP switches, and it would have worked right out of the box if I hadn't played with the DIP switches before reading the manual! My only gripe about the modem is that the speaker can only be turned off with the ATM command. I usually use

a Macintosh program that always sends an ATZ to re-initialize the modem before dialing a number, and this turns the speaker on. This is a minor annoyance, and my fiancee has yet to complain about the noise when I am dialing BBSs at a late hour of the night.

The Everex 2400E has worked exceptionally well on all but the worst of lines. I always had trouble with line noise when I called the BCS Telecommunications BBS in Squantum from my house in Somerville. Now I can call the Telecommunications BBS at 2400 bps to read my BCSNet mail, and I see at most one or two '{' characters appearing on my screen!

I have heard good things about the Zoom Telephonics 2400 bps internal modem, and the Practical Peripherals SA 2400. Many Macintosh users have bought the Practical Peripherals modem which is selling for $189 at MacConnection (1-800 Mac & Lisa). I've used the Avatex 2400 that was donated to the BCS Mac group, and it's working well so far. It has the nicest housing of any 2400 bps modem that I have seen, and it takes up the least amount of desk space which is an important consideration if your desk is as crowded as mine.

**With any modem purchase it is important that you have a chance to try out the modem on your line under your normal working conditions**

You should try to purchase your modem from a store that has a generous return policy. If you are making a first time modem purchase, I'd recommend buying from a local dealer who is willing to help you get your modem hooked up and on line. You may save some money by buying mail order, but you will lose out on support. At the Northeast Trade Center in Woburn I saw prices ranging from $80 for a 1200 bps internal modem to $169 for an Avatex 2400.

I can't vouch for all of the inexpensive units because I haven't had a chance to test them out on my noisy Somerville phone line. With any modem purchase it is important that you have a chance to try out the modem on your line under your normal working conditions. Some modems are more sensitive to line noise than others and may even vary amongst modems of the same make and model. Line noise that may be barely noticeable at 300 bps, or perhaps an annoyance at 1200 bps, becomes a major problem at 2400 bps.

## Is There Life at 9600 bps?

The only true standards for 9600 bps modems are the CCITT V.29 standard for use with leased lines and the CCITT V.32 standard for use with regular phone lines. The technology used to implement V.32 is very expensive, and "inexpensive" V.32 modems currently sell for about $3,000. There are several less expensive 9600 bps modems that don't conform to V.32, but use different schemes for transmitting at 9600 bps over regular phone lines. In general if you have the need for speed, you must use two 9600 bps modems by the same manufacturer in order to transmit files at 9600 bps. You can still use a 9600 bps modem at 300, 1200, and 2400 bps to communicate with modems made by different manufacturers. There is a very good article that discusses this and other issues confronting the first time modem buyer in the January, 1988 issue of 'The MACazine' The article "MACazine Business Report: Introduction to Modems" is written by Savant Labs. The best part of the whole article is the section entitled "Speed vs. Cost Justification" which "discusses the factors involved in justifying purchasing a 2400 bps or faster modem." (MACazine, January, 1988, pp 58). If you are seriously considering the purchase of a high speed modem, I'd strongly recommend that you read this article before making a purchase decision.

## On-Line Access Charge Proposal Dropped

The FCC's proposal to charge hourly telephone access fees for phone lines connected to networks and commercial information utilities has been dropped. According to a recent edition of the Wall Street Journal, the FCC received over 10,000 letters from the public commenting on this issue; the most letters received by the commission on a telephone issue. Apparently the decision became a hot political issue in Congress in addition to being strongly opposed by computer users. I suspect that the decision to drop the access fee proposal may also have had something to do with the fact that the Internal Revenue Service is the largest single user of information utilities and data networks!

## BCS Sysops' Meeting

A large number of BCS Sysops met at the BCS Macintosh Office on Tuesday March 29th. John Goldie, Michael Spampinato, and Don Hinds represented Boskug. I attended the meeting wearing several hats including those of Member Services Committee member, Boskug sysop, and BCS Mac sysop. The meeting was organized by Brian DeLacey, the Mac group's director of on-line services, Dan Crawford, former director of the Wang group and current co-sysop of the BCS Main Office Opus BBS, and yours truly.

The main focus of the meeting was to explore ways of increasing the level of on-line services provided to BCS members. If you have any thoughts about new services that you'd like to see please drop me a line or send a message to me on the Boskug RCP/M or in the BCSNet echo. BCSNet is available on the Main Office BBS, the Telecommunications BBS, the IBM BBS, and about 30 other BBSs, including one in Pittsburgh, PA.

We spent the first part of the meeting discussing the multi-line BBS I am setting up for the Macintosh group on a PC clone using eSoft's The Bread Board System 2.0 M software package (TBBS). TBBS is a very flexible 'bulletin board construction set' that can support up to 16 lines on a 286 based machine with the use of 2 Digi-Board eight port serial cards. I hope that the Macintosh TBBS will serve as a model for future BCS multi-line systems. If you'd like to find out more about this project, you can call the beta-version of the BCS Mac TBBS at 625-6747 (300/1200/2400, 8N1), 24 hours a day in exciting Somerville, MA.

The rest of the meeting concentrated on the overall goals for BCS On-Line services and some of the nitty gritty details of providing those services. Wes Kussmaul of Global Villages, Inc. made a proposal that the BCS set up a multi-line system

using Global Villages VAX as a host. Wes explained that the VAX is currently being used for office automation, and the excess capacity could be used to host a multi-line, multi-group BCS BBS. However the BCS would have to provide modems and VAX ports to link the VAX to the phone lines and make it accessible to BCS members.

This idea was met with a great deal of interest, with the stipulation that any VAX based system be able to communicate with other BCS BBSs via Fido EchoMail. Albert Willis, of the Apple Group and the MSC, proposed that any VAX based system should also be able to exchange messages over UseNet. Jonathan Rotenberg suggested that a VAX based system would allow BCS sysops to focus upon the quantity and quality of the information that they provide without having to worry about the mechanics of maintaining a BBS on a micro-computer. This would allow smaller groups to provide on line services to their members without having to have a computer to run the BBS on and a dedicated sysop. Wes agreed to consider these ideas and to write a more detailed proposal for the sysops' consideration. The sysops also spoke about the whole

## Should the BCS attempt to run its many bulletin boards on a shared minicomputer?

issue of sysops liabilities for any damages caused by malicious callers, viruses, and trojan horse programs. No firm decision was made about a BCS policy on these thorny problems.

There will be a presentation on sysops' liability at the May meeting of the Telecommunications group by two sysops from Compuserve's legal SIG who are writing a book on the subject. In the meantime it was agreed that sysops should take reasonable precautions to evaluate uploads for trojans and viruses, and should consider warning callers about the existence of viruses and trojans. I will report on the May meeting in my next column.

There will another BCS sysops meeting in May. If you are interested in attending please contact me and I'll make sure that you receive an invitation to the meeting.

### Swinging Into Spring

I think this spring is a pretty exciting time for the BCS in general and Boskug in particular. Don Hinds is thinking of starting a second Boskug BBS on an MS-DOS machine. This board would exchange echo-mail with many other BCS BBSs. The RCP/M is finally receiving much needed hardware maintenance and more file storage capacity. The possibility of a merger with the CP/M and Osborne groups has been raised, which means that John Kinsella, Larry Schnitger, Michael Spampinato, and I would work to coordinate the message areas and file holdings on the BOG RCP/M and the Boskug RCP/M. The Boskug RCP/M will probably be moving to the Macintosh office over the next few months to free some desk space in my living room and to restore some much needed peace and quite to my household. The phone number should stay the same if I can complete some delicate negotiations with New England Telephone. We'll either install a tie line, or install a new line at the Mac office with the same number as the current BBS line. Finally the RCP/M is running in the black for the first time in memory thanks the numerous donations and the revenues generated by telecommunications workshops!

*Bio: Adam Heath has given up on his attempts to run CP/M80 on his Mac and is running a Red Ryder Host BBS on it instead.*

# Kaypro's annual report

**by Nat Weiner**

The annual report for Kaypro's fiscal year which ended August 28, 1987 finally arrived on March 1, 1988. This was six months after the end of the fiscal year. General Motors, IBM and the rest, some of whom have larger businesses, usually get their annual reports out within three months. The report was mostly in black and white, with a little blue, and the accompanying proxy statement includes a mix of information, some old, some new, some easy to find, some hard to find.

The Chairman's Letter to Shareholders on page 1 mentions the "year's disappointing financial results," but doesn't give any figures. At page 15 the actual financial statements show a loss for the year of $9,596,215. Sales were $105 million, up from $78 mil in the previous year, but quarterly sales started at $30 mil and slid down to $20 mil. Part of the loss was $2.1 mil in computers that Kaypro sold to someone in June and July of 1987 and never got paid for.

In addition, in what is becoming an annual ritual, Kaypro wrote down inventory, this time by $5.5 mil. During the year Kaypro also settled a securities fraud suit for $9 mil, but practically all of this money came from insurance and other sources. At the end of the year, Kaypro had a net worth of under $15 mil, down from almost $40 mil three years earlier. Even after the inventory write off, and despite the decreasing rate of sales, year end inventories were $26 mil, up from $24 mil the year before. Accounts receivable were way down and accounts payable and other obligations were way up.

The board of directors and executive officers now consist entirely of four people named Kay, who together are taking salaries of over $500,000 a year from the company, which would be reasonable if the company were making money. In addition the Kay family leases Kaypro land buildings and equipment. Kaypro sold this property to the Kays for about $1.5 mil. The rent is over $500,000 per year. Kaypro stock, which came out at $10 is now under 70 cents per share.

Kaypro made a real contribution to the computer industry at one time. It also made a real contribution to many of our lives. Sad to say, it is now a non-entity, is on the ropes and appears to be sinking fast.

*Nat Weiner watches Kaypro (the Corp.) as well as the continuing soap opera involving a local professional football aggregation. His top secret negotiations involving the Boskug BBS's new hard disk are hinted at in Lee Lockwood's Director's Letter.*

# Do Not Ask for Whom the Bell Tolls... It Tolls for DOS

**by Michael Spampinato**

## Part One

We've been hearing a lot of talk about OS/2. Critics say it's too slow, too buggy, too expensive, and requires too much RAM. Proponents say it offers multi-tasking, an easy to use windowing environment, and finally breaks the 640k DOS barrier. Both sides make valid points. For me, some of the most exciting things about OS/2 originate from the fact that it DOES require "too much" RAM. Two megabytes is the recommended MINIMUM for running OS/2. Most OS/2 users will be running 4 megabytes or more of RAM.

The Mac and Amiga users I've spoken with tend to belittle OS/2's ability to break the 640K DOS barrier. Their computers have been able to handle many megabytes of contiguous RAM all along. True enough. Of the 3 computers I use most, my DOS machine has the least amount of conventional (that is, not expanded or extended) memory with 640K. My Mac is next with 1 meg of RAM, and my Amiga tops the pack with 2.5 megabytes of contiguous RAM. However, the Mac and the Amiga share a critical common trait. A common trait that, to a large extent, negates the benefits of megabytes of contiguous memory. But first...

## ...A Brief Diversion

When the Mac was first introduced, it had 128K of RAM. While users loved the graphic interface, most everyone agreed that 128K just couldn't hack it. The next Mac to hit the scene, the Mac 512K, was essentially a 128K Mac with 512K of RAM. Now that the Mac had a decent amount of memory, the problem of disk storage cropped up. Thus far the Macs were equipped with a 3.5", single sided, 400K floppy drive. The next Mac, the 512E, kept memory at 512K but upgraded the drive to an 800K double 3.5". The ROMs were upgraded to accomodate the new drive and to increase the Mac's speed. The current crop of Macs, the Plus, the SE, and the Mac II all come standard with 1 megabyte of RAM.

The Commodore Amiga 1000 began life as a 256K computer. Hardware developers were quick to pick up on the Amiga, and memory upgrades soon proliferated. Amiga users gobbled up this extra memory since the Amiga began its existence with a multitasking operating system. This past fall, Commodore replaced the Amiga 1000 with two new computers; the Amiga 500 and the Amiga 2000. The 500 comes standard with 512K of RAM and the 2000 with a megabyte of RAM. Again, hardware developers lost no time offering multi-megabyte memory upgrades for the new Amigas. And now...

## ...Back to the Present

The Amiga and the Mac both use the 68000 family of processors, have a graphic interface with icons and windows, use 3.5" floppies, and use a mouse. The critical common trait, considered a boon by users and an important sales point by manufacturers and vendors, is "downward compatability". Simply put, downward compatability assures you that a piece of software written for a current computer will also run on an older model of that computer. Some programs for the Mac still require only 128K ram. The vast majority require 512K. Only recently have a few upstarts appeared that require a megabyte of memory. In the Amiga world, most programs require either 256K or 512K of memory. Like the Mac, a few renegade Amiga programs require a megabyte of RAM. Have those one megabyte programs broken the downward compatability promise? No. Just add a memory expansion board and you can run them just fine. So what dictates downward compatability? The operating system. Macs have run variations of the same operating system since their inception. Same with Amigas.

**In normally configured systems, hardware limits the amount of memory DOS machines can access, but software limits the amount of RAM used in the Mac and Amiga world.**

Same with DOS machines. The Macs & Amigas have a 1 megabyte RAM limit as real as DOS's 640K limit. The only difference is that hardware limitations impose a DOS machine's RAM limit while software developers impose the Mac and Amiga RAM limit. This principle is so crucial I'll repeat it: hardware limitations impose a DOS machine's RAM limit while software developers impose the Mac and Amiga RAM limit. What software developer is going to write a program for Macs & Amigas that requires, say, 4 megabytes to run? Such a program has the potential for creating quite a stir, because with 4 megs or more of RAM to work with, you could come up with a hell of a program. Unfortunately, very few users actually have that much memory in their computers. Developers would lose a tremendous amount of money creating software for a market that doesn't exist. So, while the potential exists for multi megabyte programs on the Mac and the Amiga, no one is taking advantage of it. Software developers for all three systems are in the same boat. Limit DOS programs to run in a 640K environment. Limit Mac & Amiga programs to run in the 512k - 1meg environment.

Now however, IBM & Microsoft come along with OS/2 and downward compatability goes out the window. Sure, OS/2 will run a single DOS program in a "DOS compatability window". However, you will not be able to run an OS/2 application in DOS. In fact, you won't be able to run OS/2 at all unless you at least have an 80286 computer. An 8088 just won't cut it. Do keep in mind that, for all practical purposes, OS/2 is still a year or two away from any serious implementation. The Presentation Manager, which gives OS/2 it's windows type interface, won't be ready until at least the 3rd quarter of 1988. Bill Gates assures us that Microsoft will continue to support and "enhance" MS-DOS. Gates does make clear that we shouldn't hold our breaths waiting for a major revision of DOS. I agree with his philosophy. We really don't need a major revision of DOS.

We need something new.
**...to be continued**

## Keeping Up With the Jet Set

Hewlett Packard's recently introduced Desk Jet printer promises good news for everyone craving inexpensive laser quality output. Priced at $995 list, the DeskJet emulates the original HP LaserJet but uses inkjet technology. About the size of an average 80 column dot matrix printer, the DeskJet produces whisper quiet, 300 dpi output at the rate of two pages per minute. I saw this printer demonstarted and was pretty impressed. Output is of extremely high quality. Only a close side by side comparison of a LaserJet versus a DeskJet page reveals subtle differences in print density. The Deskjet's type seems to carry a shade less weight than the LaserJet's. Other than that, the Deskjet produces the best output I've ever seen from a non-laser printer.

The DeskJet follows in the tradition of the LaserJet, offering memory upgrades and font cartridges. The font cartridges are priced in the $75-85 price range and offers dozens of varieties. A nice touch is the recessed printer cable, allowing you to position the DeskJet flush to a wall.

While the $995 list price may seem a bit steep, especially in light of falling laser printer prices, the DeskJet portends a future of lower priced alternatives to laser printers. Within a year we should be seeing similar, if not higher, quality inkjet type printers with faster output in the under $500 range. I'm psyched.

## No Comment

Last month good old Stewart Schiffet of PBS's THE COMPUTER CHRONICLES reported that Kaypro had successfully cloned IBM's Microchannel Bus. Additionally, he reported that Kaypro had licensed some of the technology for the bus from IBM. News to me, so I called Kaypro. A PR rep told me that Kaypro had not cloned the Microchannel Bus. She told me any licensing of IBM's technology belonged to the realm of Kaypro's legal department. She further told me legal had no statements forthcoming.

## The First Bimonthly Fine Print Award

My first Fine Print (as in Read the ... ) Award goes to 5th Generation for the creative packaging of Fastback. Fastback is an excellent hard disk backup program. It combines ease of use with reliability and convenience. Some of its nicer features include the ability to use unformatted disks as well as the ability to use both both floppy drives of a computer, if so equipped. To sweeten the pot, 5th Generation dropped copy protection and recently lowered the price. Fifth Generation proudly states Fastback's real claim to fame in large, bold type, right on the front of the package;

"10 Megabytes/4 Minutes."

Open the package and the cover of the manual states

"10 Megabytes/8 Minutes."

Hmm. Closer inspection of the package reveals a tiny

"+" following the front cover announcement.

Following the thread of that "+" to the back of the package, one reads the fine print disclaimer; "On high density media. Also supports standard 360K, 720K, & 1.2M formats." Now all is clear. You can backup 10 megs in 4 minutes using 1.2mb floppies, and 10 megabytes in 8 minutes using 360k floppies. So,

**This suit is more than Apple vs Microsoft, or Mac vs Windows. What we have here is an opportunity to set precedents concerning just what can and cannot be copywrited. I don't like it. For my own small part, I'm selling my Macintosh and putting the proceeds into my Amiga.**

what's the rub? The rub is that the disclaimer is almost impossible to read since a licensing agreement has been pasted smack dab over it. Congratulations, Fifth Generation, upon your receipt of the first Fine Print Award.

## Apple to the Core

The impossible is happening. Apple Computer has brought suit against Microsoft, alleging copywrite infringement. It seems that Windows 2 is too close to the Mac's interface for Apple's comfort. Microsoft is taking the stand that the graphic oriented techingues involved in creating the Mac interface is "not copywriteable". Xerox, who is not involved in the suit, says they developed the windowing interface anyway, so what's the problem? Microsoft maintains they have not violated a 1985 licensing agreement with Apple that gives Microsoft the use of certain aspects of the Mac interface. Apple claims that the agreement is applicable to version 1 of Windows, but not version 2. Sounds like Return to Computer Place.

This is more than a simple "look and feel" suit. The 1985 agreement lends credence to Microsoft's position. Additionally, Microsoft developed, and is still updating, three programs that did more than any others to bring the Mac into the business world; MS Word, MS Excel, and MS Works. During the developemnt of these packages, Microsoft also contributed to the developement of the Mac interface.

This suit is more than Apple vs Microsoft, or Mac vs Windows. What we have here is an opportunity to set precedents concerning just what can and cannot be copywrited. I don't like it. For my own small part, I'm selling my Macintosh and putting the proceeds into my Amiga.

## Bulletin Board Stuff

Try dialing in to the following bulletin boards with your modem set at 8 bits, no parity, 1 stop bit, XON/XOFF enabled.

- **Boskug** 776-6029
- **Osborne** 288-4667
- **ZNode** 965-7259
- **BCS Telecom** 786-9788

# Beginning Hard Disk Management

**by Michael Spampinato**

*Being a tutorial in several parts; the main point being that managing a hard disk is not difficult, but that organization is more or less essential.*

## Part One In which we explore the concept of directories.

The intent of this series of articles is to introduce the new hard disk user and those considering a hard disk to the principles of hard disk management. It assumes familiarity with the basic DOS commands such as DIR, DEL, COPY, etc. but not much else. More experienced users may be bored to tears getting through it.

In contrast to just a couple of years ago, hard disks are now the rule rather than the exception. 20 megabyte jobs, complete with controller card and cables, can be had for under $300. Floppy based users sometimes find themselves in trouble after using a hard disk for a while. I hope to clear up some of the confusion and hopefully save you from a nasty experience somewhere down the line.

The first thing to keep in mind is that hard disks are very susceptible to being banged around. A good knock can send the heads of a hard disk crashing into the platters. This can result in anything from no effect at all to loss of data to physical damage to the drive itself. A head parking utility, often packaged with a hard disk, will position the heads over a part of the hard disk that contains no data, insuring that no loss of data will result from a head crash. Better hard disks have self parking heads that position themselves over a "safe zone" automatically upon power down. Many public domain programs will automatically park the heads if the drive hasn't been accessed during a user-specified period of time.

The second thing to realize is that hard disks don't take to being turned on and off repeatedly. When you turn your computer on, leave it on for the day until you're sure you're finished. If you're systems hangs up and you have to do a cold start, shut the computer off and leave it off for 30 seconds before turning it back on. This allows the platters of the hard disk to come to a complete stop and also puts less strain on the electronics of your system.

I'm assuming the hard disk you boot from is designated drive C:. If you're hard disk has a different letter just substitute that letter. With that out of the way, let's take a look at some basic ways a hard disk should be arranged.

DOS uses a hierarchical structure to organize files, with files being housed in directories. Directories constitute the basic building blocks of hard disk management. By creating directories you divide your disk into isolated sections, with each section dedicated to a particular application or group of related applications. Think of directories as separate floppy disks, each with a unique name. Suppose you have a 2 floppy disk computer, with a disk in drive A: and a disk in drive B:. You're in drive A: and you enter the command "DEL *.*". You've just erased everything on drive A:. The files on the disk in drive B: remain intact. It's the same with directories. You can erase all the files in one directory without affecting the files in the others. Both hard and floppy disks can be sectioned into directories.

When you first turn on your computer, whether you boot from a floppy or a hard disk, you'll be in the "root directory". The root directory is the basic directory, the starting point, from which all other directories originate.

Directories are necessary to fully utilize a hard disk. The root directory can hold no more than 512 files. Even if you have a 100 megabyte hard disk, you'll get a "disk full" message as soon as you try to put that 513th file in the root directory. My personal inclination is to keep only three files in the root directory; AUTOEXEC.BAT, CONFIG.SYS, and COMMAND.COM (more on these 3 files later). That's it. Everything else goes into directories, including the files on your DOS disks. Before you know it, your hard disk will accumulate a large number of files. For example, my computer has two 32 megabyte hard disks; drive C: and D:. Drive C: is dedicated to normal applications such as word processing, databases, and telecommunications. It has 599 files contained in 29 directories. Drive D: is dedicated to graphics programs and alternative DOS environments such as Microsoft Windows and Digital Research's Gem. It has 756 files contained in 16 directories. Both drives are only 50% filled. When you accumulate that much data, organization is of prime importance.

Directories not only allow you to keep files separated and organized, they also protect DOS from itself. Suppose you work in an office and Multimate is the office word processor. You sit down at your new computer and copy the Multimate program to the root directory. You prefer Wordperfect for your personal use. You copy your Wordperfect files onto the root directory as well. When you copied Multimate to your hard disk, one of the files was named WP.EXE. This is Multimate's program file. It just so happens that the program file for Wordperfect is also named WP.EXE. DOS won't warn you when you're about to overwrite one file with another of the same name. When you copied Wordperfect into your root directory, you replaced Multimate's WP.EXE with Wordperfect's WP.EXE. In short, you just lost Multimate. The way to prevent this is to create two new directories; one for Wordperfect and one for Multimate.

How to go about setting up directories? Be sure you're in drive C: and type the following at the DOS prompt;

**CD** - to put you in the root directory.
**MD\XYZABC** and **return**

MD (or MKDIR) is the DOS command to make a directory. The directory name follows the same conventions as filenames; eight characters for a name and 3 characters for an extension. However, extensions usually aren't used for naming directories, and I don't recommend them.

Keep in mind that, while you just made a directory, you are still in the root directory. To change to the newly made \XYZABC directory, type;

**CD\XYZABC** and hit **return.**

CD (or CHDIR), which stands for change dir, is the DOS command to go from one directory to another. You are now in the \XYZABC directory. How do you know you're in that directory? Your DOS prompt should say "C:\XYZABC". If it just says "C:" then type;

PROMPT $P$G and hit **return.**

This command changes your machine's prompt to display the name of the directory you're in.

Now that we have the \XYZABC directory set up, let's play with it a bit. Change to the root directory of the hard disk (CD\ and enter). Put a floppy disk in drive A: and switch to drive A: (type A: and return). Issue the command

**COPY *.* C:\XYZABC** and hit **return.**

After the files have been copied, change to drive C: and do a DIR. The files you just copied aren't there. Where are they? Remember I had you change to the root directory of drive c: before copying the files to C:\XYZABC? The root directory became the default directory. When you changed back from drive A: to drive C: you ended up in the default directory. Now change to the \XYZABC directory (type CD\XYZABC and hit return). Your prompt should now say C:\XYZABC. Just to demonstrate the concept of the default directory, change to drive A: and then back to drive C:. When you change back to drive C: this time, you're prompt should indicate that you're still in the XYZABC directory. Now do a DIR. The files you copied from drive A: should be there. Now change to the root directory (CD\ and hit return). How can you view the contents of \XYZABC while remaining in the root directory? Just type DIR \XYZABC and hit return. Just as you can type DIR B: from drive A: to see the contents of drive B:, you can see the contents of any directory by specifying the directory you want to examine. As we'll see, DOS commands such as DEL, TYPE, COPY, etc. can all be used in this way.

You may have noticed that I include a backslash (\) before the directory name. This is your way of telling DOS you're referring to a directory. Try this. You're still in the root directory so type:

**DIR XYZABC** and hit **return.**

You'll get a "file not found" message. Since you didn't put a backslash before XYZABC, DOS thinks you're checking the root directory to see if a file named XYZABC is there. Only by adding the backslash to the directory name will DOS know you're referring to a directory. (There are exceptions to this rule that we'll get into as things progress).

Make your directory names short and meaningful. I sometimes employ version numbers in my directory names, hence \WP42 for my Wordperfect 4.2 directory and \DOS31 for my DOS 3.1 directory. Other obvious directory names are \LOTUS for Lotus 123, \VEN for Ventura Publisher, \HG for Harvard Graphics.

Now that we've played with the \XYZABC directory, let's remove it from our hard disk. The DOS command for removing a directory is RD (for remove directory). If you've been following along, you're prompt should still say C:\XYZABC. At the prompt type

**RD\XYZABC** and hit **return.**

You'll be greeted with the message "Invalid path, not directory, or directory not empty". What happened? The \XYZABC directory contains has the files we copied into it. Erase the files and try the RD\XYZABC command again. Same message. What's the problem? You cannot remove the directory you are currently in. You have to go to a different directory first. Change to the root directory (CD\) and issue the RD\XYZABC command again. This time you'll get no error message and the directory will be gone.

In the next issue, we'll begin setting up a hard disk with directories, create the AUTOEXEC.BAT and CONFIG.SYS files, and examine some useful utilities.

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## Miniscribe, continued from page 4

through at all, I was told I might have to wait on hold for at least twenty minutes -- a pretty sorry excuse for technical assistance.

The drive comes with a sparse 23 page manual that is slanted heavily toward schematic drawings and lists of specifications. A short four page section describes how to install the ScribeCard, partition it with FDISK.COM, and format it with FORMAT.EXE. Installing the drive is a piece of cake, but the technical syntax of the manual makes it seem much harder than it really is.

Installing the drive is a simple process. Remove the machine's cover and take off the plate at the back end of a vacant slot. Since the card takes one-and-a-half slots, there must be two adjacent vacant slots or one vacant slot with a half card next to it on the right (as seen from the front). Line up the connectors at the bottom of the card with the slot, as well as the bracket at the rear of the cabinet and gently and firmly push the drive down until it seats positively. That's it. There are no other connections (to the power supply, for example) to make. When the drive is in place, run FDISK.COM to partition the drive, followed by FORMAT.EXE to format it. It adds up to less than 30 minutes work.

The Miniscribe 30, with an average seek time of 68 ms, is not a particularly fast drive, but compared to the floppy drives I am used to, it positively flies through disk access operations. If you are used to working with floppy drives, you will be happily pleased with the faster response time afforded by any hard drive.

There are a couple of shortcomings with the drive. As shipped, the heads do not park themselves automatically when the computer is powered down. However, by changing two jumper settings, the heads retreat automatically to a shipping zone after thirty seconds of inactivity. Secondly, there is no visual signal to indicate that the drive is being accessed. To some this might be an inconvenience, although the drive is quietly audible whenever it is performing a write or read operation.

Installing the Miniscribe Model 80SC Scribecard XT proved to be a great benefit at a reasonable cost. It was easy to install, has performed flawlessly, and it unquestionably makes my work easier.

**Director's Letter, continued from page 1**

lines, one for DOS users and one for CP/M. January 1, 1989 is the target date for this.

We don't know exactly what our combined numbers will be, since there are some overlaps; but probably it will amount to more than 1200, with perhaps two-thirds of them CP/M users. Many members also use DOS machines, and many others will move in that direction at some point. The hybrid nature of Boskug, now seems both appropriate and sustainable. I'll report on this further in the next issue of the Kugel, which will be mailed to the members of all three user groups.

### LeFort Le Magnifique

We are sorry to report to those not in attendance at the last meeting (the program by Bob Freed on file compression was one of the best of the year, and attended by perhaps 70 people) the imminent departure of **Art LeFort**, our CP/M disk librarian, and one of Boskug's mainstays.

However, it's for a happy reason: it seems Art has wooed and won a Texas bluebonnet lady and is moving south in May or June to marry her and resettle. Art swears that he is going to continue active in the group, via a combination of modem and PC PURSUIT (if they get their equipment fixed, that is).

Nobody appreciates all of Art's contributions to Boskug through the years more than I. He has always been one of our most enthusiastic, supportive and dependable members. He's a great guy, and we are certainly going to miss him.

Art's place as leader of the CP/M library committee will be taken by Dave Veinot, our current mail order librarian, who will help from Dave Pressburg and the librarians of the two other groups.

By the way, if you're a new CP/M member of Boskug, you should know about several disks of beginner's utilities available in the library. You can find out about them from Dave Veinot at 641-0889 (evenings & weekends).

### Bulletin Board Redux

Nat Weiner concluded an arms-for-hostages-type deal with Jim Welch of MicroPro International the terms of which are still classified. However, we wish to thank Jim for his generosity, which made it possible to replace our ailing internal 10mb hard drive with an almost-new 20.

We also traded some advertising space in the Kugel for Leo Wong installation of the above, and we thank Leo for his prompt attention.

### CP/M Training Classes

I get a surprising number of calls from new users asking for some basic training in CP/M. I want everyone to know that we stand ready to offer them, and we have instructors standing by. All we need is at least four or five people, minimum. One of our members, Rachel Cahn, has offered to organize this. But you must call me soon.

### DOS Training

Our regular monthly workshops, led by the redoubtable Michael Spampinato, continue through June. For info, call the BCS office. Adam Heath (628-9719 evenings) is also continuing his telecommunications workshops.

## Letters

Greetings form Newport, Rhode Island. I reported to the Naval Station here in Newport in January of this year, and have no transportation. My wife, kids, car, just about everything is in Charleston, South Carolina. I'm waiting for Navy housing to open up, before I move everyone and everything up here to Newport!

I have had my Kaypro 4 '84 for over four years and I feel I am ready to graduate from PIP and COPY, but some of the documentation I have for programs purchased from sources like Micro Cornucopia might as well be in Chinese.

I use the ol' trusty mostly for word processing, grade computation, and graphics, using WordStar, Side2, and The Word, CalcStar, BASIC, Rembrandt, Draw, Fancy Font, Uniform, and Mychess. The only maintenance the Kaypro has needed is having the disk drives cleaned three times -- not bad for four years!

Although I have no idea what a computer user group is for, I feel a need to talk Kaypro with other Kaypro owners. I'm so sick and tired of IBM clones with massive amounts of graphics and memory and hard drives. I just smile quietly when they don't work though.

Robert N. Cloud
GSEC(SW), USN
*Robert can be reached at SWOSCOLCOM 64, NETC, Newport, RI 02841-5001, (401) 841-4664*

## Classified

**For Sale**

Kaypro II computer and Leading Edge serial printer Model F10-40 with sheet feeder. Entire package for $450 or best offer. Call John K. Rudolph (207) 384-5988.

**For Sale**

Kaypro 2X with all original software and original daisy printer. Used once, a new machine. First $900 takes all. Call (617) 843-6472. Or call Ron at (617) 749-4452, ask about Marina's computer.

**Position Desired**

Single young experienced microcomputer marketing executive seeks a position in the United States. Please write to:

Mustafa Kamal, G.P.O. Box # 2941, Dhaka 1000. Bangladesh.

**Help!**

Computer idiot needs help installing a modem and interfacing a Kaypro 2 and Zenith Laptop. Fee negotiable. Steve 354-6323.

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# The new BCS Infoline

The BCS Infoline has been reorganized; it can be reached by dialing **(617) 367-6751**, but only if you have a touch tone telephone. The recording will tell you all you need to know to access information about the events of your choice; some of the current entry codes likely to be of interest are listed herein. Contact the Kugel or the BCS office if you want a listing of the hundred or so separate codes available.

## The simple guidelines

To hangup enter the disconnect code - **70**. If you don't enter the code, you create an incoming message and the system does not have enough disk space to store incoming messages. Enter codes as soon as you are prompted to do so. The system will disconnect you after 15 seconds if no code is entered. This also creates an incoming message card and will cause the disk to fill up. Codes can be entered when prompted, or during the reading of a menu. Codes can not be entered during the reading of a meeting announcement. It is only necessary to enter the pound symbol (**#**) when prompted by the system. The code for Boskug is **108**, for the Boskug Workshops it is **302**

If you experience problems with the system, call the main office of the BCS at (617) 367-8080.

| CODE # | GROUP NAME |
|---|---|
| 201 | ARTIFICAL INTELLIGENCE MENU |
| 603 | BBS INFO |
| 301 | BEGINNERS CLINIC |
| 2043 | BUSINESS RESOURCE EXCHANGE |
| 202 | BUSINESS SIG |
| 203 | CD/ROM/OPTICAL |
| 104 | COMMODORE |
| 207 | CP/M |
| 208 | DATABASE MANAGEMENT |
| 13 | DESKTOP PUBLISHING |
| 304 | DESKTOP PUBLISHING CLINICS |
| 209 | DISABLED |
| 70 | DISCONNECT |
| 210 | EDUCATION |
| 30 | EDUCATIONAL PROGRAMS |
| 50 | GENERAL MEETING INFO |
| 211 | GRAPHICS |
| 70 | HANGUP |
| 1071 | IBM MA MENU |
| 107 | IBM MENU |
| 305 | IBM WORKSHOPS |
| 11 | IBM-BOSTON |
| 212 | INTERNATIONAL |
| 108 | KAYPRO |
| 302 | KAYPRO WORKSHOPS |
| 109 | LAP COMPUTERS |
| 215 | LOTUS |
| 5 | MAIN MENU |
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